

Received: Januari 2021 Accepted: Maret 2022 Published: April 2022

Studi Eksperimental Pengujian Arus Pada Brushless DC Motor Rotomax 150cc

Erwan Eko Prasetyo¹, Erwhin Irmawan², Novika Ratnadila^{3*}
^{1,2,3}Sekolah Tinggi Teknologi Kedingantaraan Yogyakarta

*E-mail: 180102007@students.sttkd.ac.id

Abstract

The development of technology is currently very rapid, especially in the field of transportation, both land, sea, and air. Unmanned aircraft is one result of the development of transportation technology. This unmanned aircraft has been widely used to assist in various fields, such as civil, military and health. This aircraft has a variety of propulsion systems, some use electricity as a power source and some use fuel. The unmanned aircraft that will be used for this test uses an electric propulsion system as its power source, which uses a 16000mAh battery. The use of batteries is also a way to save fuel energy and make it more environmentally friendly. The purpose of this test is to determine the current acting on a brushless DC motor when a varying voltage is applied. Apart from wanting to know how much current works on the brushless motor, this test is also to observe the effect of voltage on the resulting RPM. The voltages used are 25V, 24V and 23V and then tested at several RPM levels ranging from 500 RPM to the maximum RPM that can be produced at these voltages. The motor used in this drone is a 150cc BLDC (Brushless DC Motor), then uses an ESC (Electronic Speed controller) 300A, with the propeller used is a 30*8 inch multistar carbon fiber. The method used is the experimental method. The results of this test are at a voltage of 25V, the current generated is higher than the voltage of 24V and 23V. At 25V the current produced reaches 13.2A, at 24V it is 12.6V and at 23V is 12.33V. Seen at a voltage of 25V and 24V it produces 3200 RPM, while at a voltage of 23V it only reaches 3100 RPM.

Keywords : Unmanned aircraft, current, voltage, RPM, BLDC, ESC.

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